What is claimed is:

[Claim 1] 1. A propeller shaft arrangement adapted to be connected to an output shaft (11) of a drive motor (2) for causing propulsion of a carrying vehicle in a travel direction, the propeller shaft arrangement comprising:

a propeller shaft (15) having at least a portion thereof provided with a spline (19) adapted to achieve a rotationally fixed connection with a corresponding spline located inside a hub of a corresponding propeller; and

said spline (19) being oriented at an oblique angle (a) with respect to a longitudinal axis of said propeller shaft (15).

[Claim 2] 2. The propeller shaft arrangement as recited in claim 1, wherein said spline (19) is helically arranged on said propeller shaft (15).

[Claim 3] 3. The propeller shaft arrangement as recited in claim 1, wherein said spline (19) is one of a plurality of splines (19), each of said plurality of splines (19) being oriented at the predetermined oblique angle (α) with respect to a longitudinal axis of said propeller shaft (15).

[Claim 4] 4. The propeller shaft arrangement as recited in claim 1, wherein said propeller shaft (15) is one of a plurality of propeller shafts (15,16) having a common longitudinal axis, and each of said plurality of propeller shafts (15,16) having at least one spline (19,20) positioned thereupon and oriented at an oblique angle (α, ß) with respect to the longitudinal axis.

[Claim 5] 5. The propeller shaft arrangement as recited in claim 4, wherein each of said at least one spline (19, 20) is helically arranged on the respective propeller shaft (15, 16).

[Claim 6] 6. The propeller shaft arrangement as recited in claim 5, wherein each of said at least one helically arranged spline (19, 20) is turned in a same direction, as viewed from the rear with respect to a direction of travel of a carrying vehicle, as an associated propeller would rotate to propel said propeller shaft arrangement in the direction of travel.

[Claim 7] 7. The propeller shaft arrangement as recited in claim 5, wherein said at least one spline (19, 20) on each of. said propeller shafts (15, 16) is oriented at a different oblique angle (α, β) with respect to the longitudinal axis of said propeller shafts (15, 16).

[Claim 8] 8. The propeller shaft arrangement as recited in claim 7, wherein each of said oblique angles (α, β), with respect to the longitudinal axis of said propeller shafts (15, 16), is oriented such that a resultant force (F_S) between a tangential force component (F_T) of drive-motor-induced torque and a corresponding driving compressive force (F_R) is oriented at a substantially right angle to the respective receiving spline (19, 20) of said resultant force (F_S) when drive-motor power is applied.

[Claim 9] 9. The propeller shaft arrangement as recited in claim 7, wherein orientations of said oblique angles (α, β), as measured with respect to the longitudinal axis of said propeller shafts (15, 16), are predetermined based on an expected cruising speed of a drive motor to be associated therewith on a carrying vehicle.

[Claim 10] 10. A propeller arrangement having a hub (23) with a through-opening (24) and blades connected thereto, the propeller arrangement being adapted to be connected, via a propeller shaft (15) to an output shaft (11) of A drive motor (2) for causing propulsion of a carrying vehicle in a travel direction, the propeller arrangement comprising: a propeller (7) having at least a portion thereof provided with a spline (25) adapted to achieve a rotationally fixed connection with a corresponding spline located on a corresponding propeller shaft; and said spline (25) being oriented at an oblique angle (a) with respect to a longitudinal axis of said propeller (7).

[Claim 11] 11. The propeller arrangement as recited in claim 10, wherein said spline (25) is helically arranged on said propeller (7).

[Claim 12] 12. The propeller arrangement as recited in claim 10, wherein said spline (25) is one of a plurality of splines (25), each of said plurality of splines (25) being oriented at the predetermined oblique angle (a) with respect to a longitudinal axis of said propeller (7).

[Claim 13] 13. The propeller arrangement as recited in claim 10, wherein said propeller (7) is one of a plurality of propellers (7, 8) having a common longitudinal axis, and each of said plurality of propellers (7, 8) having at least one spline (25, 28) positioned thereupon and oriented at an oblique angle (α, β) with respect to the longitudinal axis.

[Claim 14] 14. The propeller arrangement as recited in claim 13, wherein each of said at least one spline (25, 28) is helically arranged on the respective propeller (7, 8).

[Claim 15] 15. The propeller arrangement as recited in claim 14, wherein said at least one spline (25, 28) on each of said propellers (7, 8) is oriented at a different oblique angle (α, β) with respect to the longitudinal axis of said propellers (7, 8).

[Claim 16] 16. The propeller arrangement as recited in claim 15, wherein each of said oblique angles (α, β), with respect to the longitudinal axis of said propellers (7, 8), is oriented such that a resultant force (F_S) between a tangential force component (F_T) of drive- motor-induced torque and a corresponding driving compressive force (F_R) is oriented at a substantially right angle to the respective receiving spline (25, 28) of said resultant force (F_S) when drive-motor power is applied.

[Claim 17] 17. The propeller arrangement as recited in claim 15, wherein orientations of said oblique angles (α, β), as measured with respect to the longitudinal axis of said propellers (7, 8), are predetermined based on an expected cruising speed of a drive motor to be associated therewith on a carrying vehicle.

[Claim 18] 18. An adaptive arrangement having a through-opening (34) in a hub (33) thereof and the adaptive arrangement being configured to be interstitially positioned between a propeller (7) and a propeller shaft (15) which is coupled to an output shaft (11) of a drive motor (2) for causing propulsion of a carrying vehicle in a travel direction, the adaptive arrangement comprising:

an adapter (30) having a through-opening (34) with at least a portion thereof provided with a spline (35), said spline (35) adapted to achieve a rotationally fixed connection with a corresponding spline located on a corresponding propeller shaft, and said spline (35) being oriented at an oblique angle (a) with respect to a longitudinal axis of said adapter (30); and

an exterior of said adapter (30) being configured for rotationally fixed engagement with a corresponding propeller.

[Claim 19] 19. The adaptive arrangement as recited in claim 18, wherein said spline (35) is helically arranged on said adapter (30).

[Claim 20] 20. The adaptive arrangement as recited in claim 18, wherein said spline (35) is one of a plurality of splines (35), each of said plurality of splines (35) being oriented at the predetermined oblique angle (a) with respect to a longitudinal axis of said adapter (30).

[Claim 21] 21. The adaptive arrangement as recited in claim 18, wherein said adapter (30) is one of a plurality of adapters (30, 31) having a common longitudinal axis, and each of said plurality of adapters (30, 31) having at least one spline (35, 38) positioned thereupon and oriented at an oblique angle (α, β) with respect to the longitudinal axis.

[Claim 22] 22. The adaptive arrangement as recited in claim 21, wherein each of said at least one spline (35, 38) is helically arranged on the respective adapter (30, 31).

[Claim 23] 23. The adaptive arrangement as recited in claim 22, wherein said at least one spline (35, 38) on each of said adapters

(30, 31) is oriented at a different oblique angle (α, β) with respect to the longitudinal axis of said adapters (30, 31).

[Claim 24] 24. The adaptive arrangement as recited in claim 23, wherein each of said oblique angles (α, β), with respect to the longitudinal axis of said adapters (30, 31), is oriented such that a resultant force (F_S) between a tangential force component (F_T) of drive- motor-induced torque and a corresponding driving compressive force (F_R) is oriented at a substantially right angle to the respective receiving spline (35, 38) of said resultant force (F_S) when drive-motor power is applied.

[Claim 25] 25. The adaptive arrangement as recited in claim 23, wherein orientations of said oblique angles (α, β), as measured with respect to the longitudinal axis of said adapters (30, 31), are predetermined based on an expected cruising speed of a drive motor to be associated therewith on a carrying vehicle.

[Claim 26] 26. A propulsion arrangement adapted to be connected to an output shaft (11) of a drive motor (2) for causing propulsion on a carrying vehicle in a travel direction, the propulsion arrangement comprising:

a propeller (7) having at least a portion thereof provided with a spline (25) adapted to achieve a rotationally fixed connection with a corresponding spline (19) located on a corresponding propeller shaft (15), said spline (25) on said propeller (7) being oriented at an oblique angle (a) with respect to a longitudinal axis of said propeller (7); and

said propeller shaft (15) having at least a portion thereof provided with said spline (19) adapted to achieve a rotationally fixed connection with the corresponding spline (25) located inside the propeller (7), said spline (19) of

said propeller shaft (15) being oriented at an oblique angle (α) with respect to a longitudinal axis of said propeller shaft (15).

[Claim 27] 27. The propulsion arrangement as recited in claim 26, wherein said splines (19, 25) are helically arranged on said propeller shaft (15) and said propeller (7), respectively.

[Claim 28] 28. The propulsion arrangement as recited in claim 26, further comprising:

said propeller (7) being one of a plurality of propellers (7, 8) having a common longitudinal axis, and each of said plurality of propellers (7, 8) having at least one spline (25, 28) positioned thereupon and oriented at an oblique angle (α, β) with respect to the longitudinal axis; said propeller shaft (15) being one of a plurality of propeller shafts (15, 16) having a common longitudinal axis, and each of said plurality of propeller shafts (15, 16) having at least one spline (19, 20) positioned thereupon and oriented at an oblique angle(α, β) with respect to the longitudinal axis; and

said splines (19, 20, 25, 28) being configured for mating engagement that fixes relative rotational movement between said propeller (7) and said propeller shaft (15) when drive-motor power is applied.